

What is claimed is:

1. A multi-mode modem, comprising:
 - a first device configured to communicate with a first communication system;
 - a second device configured to communicate with a second communication system;
 - a processor communicatively coupled with at least one of the first and second devices; and
 - a control function configured to place the device in one of the following communication modes:
 - communication with the first communication system,
 - communication with the second communication system,
 - simultaneous communication with both the first and second communication systems, or
 - gateway communication between the first and second communication systems.
2. The multi-mode modem of claim 1, wherein the processor comprises the control function.
3. The multi-mode modem of claim 1, wherein the first device comprises a RF section and a baseband section, and wherein the baseband section comprises the control function.

4. The multi-mode modem of claim 3, further comprising a communication interface between the first device and the second device, wherein the communication interface allows the control function to enable the second device.

5. The multi-mode modem of claim 1, wherein the second device comprises a RF section and a baseband section, and wherein the baseband section comprises the control function.

6. The multi-mode modem of claim 5, further comprising a communication interface between the first device and the second device, wherein the communication interface allows the control function to enable the first modem device.

7. The multi-mode modem of claim 1, wherein the control function is configured to:

query the first device to determine if communication with the first communication system is available; and

query the second device to determine if communication with the second communication system is available.

8. The multi-mode modem of claim 7, wherein the second device is queried only if communication with the first communication system is not available.

9. The multi-mode modem of claim 7, wherein the control function is further configured to connect with the first communication system if the first device responds that communication with the first communication system is available.

10. The multi-mode modem of claim 7, wherein the control function is further configured to connect with the second communication system if the second device responds that communication with the second communication system is available.

11. The multi-mode modem of claim 1, wherein the control function is configured to:

query the first device to determine if communication with the first communication system is available;

connect with the first communication system;

query the second device to determine if communication with the second communication system is available; and

connect with the second communication system.

12. The multi-mode modem of claim 11, configured to engage in simultaneous communication with the first and second communication systems once a connection with each is established.

13. The multi-mode modem of claim 11, configured to engage in gateway communication with the first and second communication

communication systems once a connection with each is established.

14. A system for wireless communication, comprising:
 - a host device comprising a processor;
 - a multi-mode modem, comprising:
 - a first device configured to communicate with a first communication system, and
 - a second device configured to communicate with a second communication system, and
 - an interface device coupled with at least one of the first and second devices, the interface device configured to interface the first and second devices with the host processor; and
 - a control function configured to place the device in one of the following communication modes:
 - communication with the first communication system, or
 - communication with the second communication system.

15. The system of claim 14, wherein the control function is further configured to place the system in simultaneous communication with both the first and second communication systems.

16. The system of claim 14, wherein the control function is further configured to place the system in gateway communication between the first and second communication systems.

17. The system of claim 14, wherein the processor comprises the control function.

18. The system of claim 17, wherein the interface device is configured to interface the processor with the first device, and wherein the control function is configured to:

query the first device to determine if communication with the first communication system is available; and

query the second device to determine if communication with the second communication system is available.

19. The system of claim 18, wherein the control function is further configured to query the second device only if communication with the first communication system is not available.

20. The system of claim 18, wherein the control function is further configured to instruct the first device to switch the interface device so that the interface device interfaces the host processor with the second device if communication with the first communication system is not available.

21. The system of claim 14, wherein the first device comprises a RF section and a baseband section, and wherein the baseband section comprises the control function.

22. The wireless communication device of claim 21, further comprising a communication interface between the first device and the second device, wherein the communication interface allows the control function to enable the second device.

23. The system of claim 22, wherein the control function is configured to:

query the first device to determine if communication with the first communication system is available; and

query the second device to determine if communication with the second communication system is available.

24. The system of claim 23, wherein the control function is further configured to query the second device only if communication with the first communication system is not available.

25. The system of claim 14, wherein the second device comprises a RF section and a baseband section, and wherein the baseband section comprises the control function.

26. The system of claim 25, further comprising a communication interface between the first device and the second device, wherein the communication interface allows the control function to enable the first device.

27. The system of claim 26, wherein the control function is configured to:

query the first device to determine if communication with the first communication system is available; and

query the second device to determine if communication with the second communication system is available.

28. The system of claim 27, wherein the control function is further configured to query the second device only if communication with the first communication system is not available.

29. The wireless communication system of claim 14, wherein the interface chip comprises the control function.

30. The wireless communication system of claim 29, wherein the control function is configured to:

query the first device to determine if communication with the first communication system is available; and

query the second device to determine if communication with the second communication system is available.

31. The system of claim 30, wherein the control function is further configured to query the second device only if communication with the first communication system is not available.

32. A multi-mode modem card comprising a standard form factor and configured to interface with a host device, the multi-mode modem card including:

a primary device configured to communicate with a first communication system; and

an interface configured to receive a secondary modem card comprising a smaller form factor than the primary modem card, the secondary modem card including a secondary device configured to communicate with a second communication system.

33. The multi-mode modem card of claim 32, further comprising an interface device configured to interface the multi-mode and secondary modem cards with a host processor in the host device.

34. The multi-mode modem card of claim 33, wherein the interface device comprises:

a host device interface;

a primary device interface; and

a secondary device interface.

35. The multi-mode modem card of claim 34, wherein the host device interface comprises address and data lines.

36. The multi-mode modem card of claim 34, wherein the primary device interface is a serial data interface, and wherein the

interface device is further configured to receive address and data information from the host device interface and convert it into serial data that can be communicated over the primary device interface.

37. The multi-mode modem card of claim 36, wherein the interface device is further configured to receive data information from the primary device interface and convert it into data and address information that can be communicated over the host device interface.

38. The multi-mode modem card of claim 37, wherein the primary device interface is a universal serial bus interface.

39. The multi-mode modem card of claim 38, wherein the primary device interface includes a pulse code modulation interface for voice data.

40. The multi-mode modem card of claim 34, wherein the secondary device interface comprises address and data lines, and wherein the interface device is configured to interface the address and data lines on the host processor interface with the address and data lines on the secondary device interface.

41. The multi-mode modem card of claim 34, wherein the secondary device interface is a Compact Flash interface, and wherein the secondary modem card is a Compact Flash modem card.

42. A system for wireless communication, comprising:

a host device comprising a processor;

a multi-mode modem card comprising a standard form factor configured to interface with the host device, the multi-mode modem card including:

a primary device configured to communicate with a first communication system, and

an interface configured to receive a secondary modem card comprising a smaller form factor than the multi-mode modem card, the secondary modem card including a secondary device configured to communicate with a second communication system, and

an interface device coupled with at least one of the primary and secondary devices, the interface device configured to interface the primary and secondary devices with the host processor; and

a control function configured to place the system in one of the following communication modes:

communication with the first communication system, or

communication with the second communication system.

43. The system of claim 42, wherein the control function is further configured to place the system in simultaneous communication with both the first and second communication systems.

44. The system of claim 42, wherein the control function is further configured to place the system in gateway communication between the first and second communication systems.

45. The system of claim 42, wherein the processor comprises the control function.

46. The system of claim 45, wherein the interface device is configured to interface the processor with the primary device, and wherein the control function is configured to:

query the primary device to determine if communication with the first communication system is available; and

query the secondary device to determine if communication with the second communication system is available.

47. The system of claim 46, wherein the control function is further configured to query the second device only if communication with the first communication system is not available.

48. The system of claim 42, wherein the interface device comprises:

a host device interface;

a primary device interface; and

a secondary device interface.

49. The system of claim 48, wherein the host device interface comprises address and data lines.

50. The primary modem card of claim 48, wherein the primary device interface is a serial data interface, and wherein the interface device is further configured to receive address and data information from the host device interface and convert it into serial data that can be communicated over the primary device interface.

51. The system of claim 50, wherein the interface device is further configured to receive data information from the primary device interface and convert it into data and address information that can be communicated over the host device interface.

52. The system of claim 51, wherein the primary device interface is a universal serial bus interface.

53. The system of claim 52, wherein the primary device interface includes a pulse code modulation interface for voice data.

54. The system of claim 48, wherein the secondary device interface comprises address and data lines, and wherein the interface device is configured to interface the address and data lines on the host device interface with the address and data lines on the secondary device interface when required.

55. The system of claim 48, wherein the secondary device interface is a Compact Flash interface, and wherein the secondary modem card is a Compact Flash modem card.

56. A method for controlling mode switching in a multi-mode modem, comprising:

determining if a first communication system coverage is available; if the first communication system coverage is not available, then switching an interface between the multi-mode modem and a host device from a first communication mode to a second communication mode; and determining if a second communication system coverage is available.

57. The method of claim 56, further comprising if the second communication system coverage is not available, then searching for second communication system coverage for a predetermined time period.

58. The method of claim 57, further comprising if the predetermined time period elapses without finding the second communication system coverage, then switching the interface between the multi-mode modem and the host device from the second communication mode to the first communication mode.

59. The method of claim 57, further comprising if the second communication system coverage is found before the predetermined time

period elapses, then establishing a connection with the second communication system.

60. The method of claim 56, further comprising establishing a connection with the first communication system if the first communication system coverage is found.

61. The method of claim 56, further comprising establishing a connection with the second communication system if the second communication system coverage is found.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100